

REMARKS

Claims 36 and 44 have been amended to replace the term "oxidising" with "oxidizing." No new matter has been added. Claims 17, 32, 40 and 48 have been amended to correct minor typographical errors.

Claims 13-19 and 28-53 are currently pending.

CLAIM REJECTION

Rejection of claims under 35 U.S.C. § 112, first paragraph

The Examiner has rejected claims 13-19 and 28-53 under 35 U.S.C. § 112, first paragraph, "because the specification, while being enabling for hexose oxidase, does not reasonably provide enablement for all oxidoreductases." See Office Action at p. 2. Applicants respectfully traverse this rejection.

As the Examiner has acknowledged, the specification is enabled for hexose oxidase. See Office Action at p. 2. The Examiner contends however that no other oxidoreductases are taught. *Id.* As pointed out by the Court of Customs and Patent Appeals in a decision involving chemical claims, "appellants (here, applicants) are not required to disclose every species encompassed by their claims even in an unpredictable art" (emphasis original). *In re Angstadt*, 537 F.2d 498, 503 (CCPA 1976). Such a holding is only reasonable, since it is very difficult, if not impossible, to test and disclose all operative species. Further, to require so would apparently necessitate a patent application with an enormous number of working examples. As the *Angstadt* court explains:

such a requirement would force an inventor seeking adequate patent protection to carry out a prohibitive number of actual experiments. This would tend to discourage inventors from filing patent applications in an unpredictable area since the patent claims would have to be limited to those embodiments which are expressly disclosed. A potential infringer could readily avoid "literal" infringement of such claims by merely finding another analogous catalyst complex (**the claimed genera of oxidoreductases**) which could be used in 'forming hydroperoxides' (**dough improving compositions and flour doughs**). *Id.*, at 502-03.

Thus, all the law requires is that a patent applicant provide a disclosure sufficient to enable one skilled in the art to carry out the invention commensurate with the scope of the claims. The specification has informed and demonstrated to a person having ordinary skill in the art how to use the invention commensurate in scope with the claims. Accordingly, the specification adequately enables the claimed dough improving compositions and flour dough.

Nonetheless, Applicants provide additional supporting experimental data demonstrating glucooligosaccharide oxidase (an oxidoreductase), known in the art and known to be capable of oxidizing maltose (See Lin *et al.*, "Purification and characterization of a novel glucooligosaccharide oxidase from *Acremonium strictum* T1," *Biochimica et Biophysica Acta*, Vol. 1118, p. 41-47 (1991) ("Lin *et al.*") is another example of an oxidoreductase which is able to oxidize maltose that has beneficial effects on rheological properties of a dough. See Declaration of Jørn Borch Søe ("the Declaration," attached at Appendix A). The Lin *et al.* reference and other references were submitted in a response to an Office Action filed April 2, 2003 in the parent application U.S. Serial No. 09/932,923 (now U.S. Patent No. 6,726,942) as examples of references which disclose or suggest other oxidoreductases capable of oxidizing maltose at the priority date of the application.

The Declaration demonstrates that glucooligosaccharide oxidase is able to oxidize maltose. See Table 1 and paragraph 6 of the Declaration. The Declaration further demonstrates that glucooligosaccharide oxidase results in the oxidation of free thiol in wheat gluten of dough slurry. See Figures 2 and 3 and paragraphs 7-8 of the Declaration. This oxidation by glucooligosaccharide oxidase is shown by a decrease in the amount of free thiol in the dough slurry when compared to the sample with the inactivated enzyme. Such an oxidation of free thiol groups on gluten molecules result in the formation of disulphide bridges in the gluten network which thereby improves the rheological properties of the dough as well as improve the dough handling properties and the quality of the baked goods. The Declaration provides additional support that oxidoreductases, other than hexose oxidase, can be used in dough improving compositions and flour doughs of the present application.

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Applicants thus believe that Applicants have informed and demonstrated to a person having ordinary skill in the art how to use the invention commensurate in scope with the claims. Applicants respectfully request reconsideration and withdrawal of this rejection with respect to claims 13-19 and 28-53.

CONCLUSION

For the foregoing reasons, Applicants respectfully request reconsideration and withdrawal of the pending rejections. Applicants believe that the claims now pending are in condition for allowance. Should any fees be required by the present Amendment, the Commissioner is hereby authorized to charge Deposit Account **19-4293**.

Respectfully submitted,

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